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ABSTRACT

This study examined the effectiveness of racial and cultural awareness programs on the attitudes of white college students toward diversity on campus. It is based on a subset of students included in the National Study of Student Learning, specifically 1,061 white first-year undergraduates at 17 institutions, who answered questionnaires immediately before starting college, at the end of their first year, and at the end of their second year. The study found that, after controlling for family income, father's education, and degree aspirations, both sex and major field were significantly related to students' precollegiate attitudes toward diversity on campus. Students who stayed in conservative majors during their first two years in college were significantly less likely to participate in a racial or cultural awareness workshop during their first year in college than students who stayed in liberal majors. Finally, the study found that students who participated in racial or cultural awareness workshops developed more favorable attitudes toward diversity on campus. This finding is of particular importance because students in conservative majors (especially male students) start college with significantly less favorable attitudes toward diversity on campus. (Contains 39 references.) (MDM)

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PARTICIPATION IN A RACIAL OR CULTURAL AWARENESS WORKSHOP AND ATTITUDES TOWARD DIVERSITY ON CAMPUS

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This paper was presented at the annual meeting of the Association for the Study of Higher Education held at the Marriott Hotel, Orlando, Florida, November 2-5, 1995. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

PARTICIPATION IN A RACIAL OR CULTURAL AWARENESS WORKSHOP AND ATTITUDES TOWARD DIVERSITY ON CAMPUS

Seven years ago, a study by the American Council on Education (Commission on Minority Participation in Education and American Life, 1988) concluded that the long-term economic welfare of the United States depends upon increasing the educational attainment of our nation's growing numbers of racial and ethnic minorities. The goal remains elusive. Recent electoral results and legislation threaten the egalitarian educational policies promoted 41 years ago by the Supreme Court in *Brown v. Board of Education* (1954). The resurgence of racial and ethnic violence in the U.S. (e.g., Associated Press, 1994; Goleman, 1990) is of growing concern to students, faculty, and administrators in higher education.

Researchers increasingly document casualties of the conflicts. Ehrlich's (1990, 1992) investigations for the National Institute Against Prejudice and Violence indicate that nearly one million U.S. college students experience racially or ethnically motivated violence annually, and that most victims do not report these incidents to any campus official. Indeed, nearly a quarter of minority students on college campuses report racially or ethnically motivated assaults, vandalism, or harassment, and more than half of minority group members experience related distress as a result (Ehrlich, 1990, 1992). Ehrlich suggests that, in an "era of declining opportunities and resources, college students tend to view classmates from different backgrounds as competitors rather than partners" (Levin & McDevitt, 1995, p. B2). Researchers have established the relationship between racism on campus and diminished academic performance (e.g., Nettles, 1988), reduced degree persistence (e.g., Arbona & Novy, 1990), and greater alienation from the institution (e.g., Cabrera & Nora, 1994; Hurtado, 1992).

A growing body of literature also substantiates a significant relationship between field of study and college students' attitudes toward different groups of individuals. Guimond and Palmer (1989, 1990), Guimond et al. (1989), and Sidanius et al. (1991) report that students in relatively conservative major fields, such as business, engineering, and the natural sciences, express progressively less favorable attitudes toward individuals with different backgrounds or characteristics (including racial minorities) over the course of their college careers. Conversely, students in relatively liberal majors, such as education, the humanities, and the social sciences, show increasingly favorable attitudes. These studies have focused on single institutions, however, and have not examined potential differences between the attitudes of men and women.

Gender-related differences might confound interpretations of the effects of various major fields on students' attitudes. Other researchers have documented significant gender-related variation in racial attitudes among college students at a broad range of institutions. A nationwide survey of first-year students, for example, recently revealed that more men (17.1%) than women (13.7%) believed that racial discrimination is no longer a major problem in America (Chronicle of Higher Education, 1995). Studies increasingly indicate that white female undergraduates in general tend to hold more favorable intergroup attitudes than white male undergraduates (e.g., Springer et al., 1995), a reversal of dynamics documented during the 1950s and early 1960s (e.g., Qualls, Cox, & Schehr, 1992). It remains unclear whether these differences remain net of the impact of various major fields. Recent studies (e.g., Hagedorn, et al., 1995) report that men remain disproportionately overrepresented in relatively conservative fields, such as engineering and the physical sciences, while women continue to be disproportionately overrepresented in relatively liberal fields, such as education and the social sciences.

To address the problem of intergroup conflict, faculty and administrators at several colleges and universities have developed and implemented racial or cultural awareness workshops for students. Surprisingly, little research has been conducted to assess the effectiveness of these programs (see Neville & Furlong, 1994, for a review). Previous studies suggest that students

who participate in prejudice-reduction programs increase their understanding of racism and their commitment to combating racist practice, but "these findings might reflect the students' preexisting desire and receptivity to learn about racism, thus reflecting a subject selection bias" (Neville & Furlong, 1994, p. 371).

Exacerbating problems in interpreting the results of previous analyses, studies have primarily focused on single institutions and have generally overlooked the possibly different (or interactive) effects of individual characteristics, such as gender, and environmental impacts, such as the socializing influences associated with different major fields, on students' likelihood of participating in prejudice-reducation programs and on changes in their attitudes toward diversity. In a rare exception, Smith (1992) concluded that white women developed more favorable attitudes toward affirmative action programs as a result of participating in programs designed to increase racial awareness, but white men did not. Because of limitations in sample size at a single institution, she was unable to assess the possible interaction of gender and major.

Multi-institutional studies (e.g. Astin, 1993a, 1993b; Pascarella et al., 1994) have generally documented the positive impact of racial and cultural awareness workshops. No known research, however, has examined major field and gender simultaneously when assessing the likelihood of attending and the effects of participating in interventions designed to develop more favorable attitudes toward diversity on campus among college students. Questions remain regarding whether the positive effects of racial and cultural awareness workshops on students' racial attitudes extend generally to men and women and to students in both liberal and conservative majors.

This study assesses the effects of awareness programs on the attitudes of white students toward diversity on campus. The focus on white racism is not intended to trivialize the consequences of racism among persons of color, however. Based on the studies reviewed above, three important questions will be answered in this investigation: (1) What precollege differences are significantly associated with white students' attitudes toward diversity on campus? (2) Are men and women, and students in different majors, more or less likely to participate in racial or

cultural awareness workshops during their first year of college? (3) Are the effects of participation different for men and women and for students in different majors?

METHOD

Conceptual Framework

The conceptual model for this study is based on more than 40 years of social-psychological research on intergroup relations (see Pettigrew, 1986, and Stephan, 1987, for reviews). The model suggests that attitudes (A) and behavior (B) are a function of the societal context (S), the environment (E), and the person (P): $A+B=f(S+E+P)$. It is suggested that the social and economic climate in the U.S during the early to mid 1990s has been anathema to the general development of more favorable attitudes toward diversity among white college students. Similarly, collegiate environments, such as the socializing influences of major fields and of racial or cultural awareness programs, are assumed to affect students' attitudes toward diversity differently—net of individual characteristics such as gender and socioeconomic status. Women in general are hypothesized to start college with more favorable attitudes toward diversity than men in general and to maintain more favorable attitudes throughout their college careers.

Research Design

A quasi-experimental, three-wave, panel design was employed for this analysis of survey data. Figure 1 (adapted from Campbell & Stanley, 1963, p. 68) illustrates the design in which attitudes were assessed in waves one and three (represented with "O" for observation) and workshop participation was assessed in wave two (represented by a question mark under an "X" to indicate a self-reported treatment). Assessing self-reported treatments or behavior during an intermediate wave avoids a potentially spurious source of higher correlation—items appearing on

the same questionnaire tend to be more highly correlated—(Campbell & Stanley, 1963) and clarifies the temporal order of attitudinal change (Finkel, 1995).

Insert Figure 1 about here

Data were collected for the National Study of Student Learning (NSSL), a large multi-institutional study of U.S. college students. The NSSL is a three-year, longitudinal research project begun in 1992 under the auspices of the National Center on Postsecondary Teaching, Learning, and Assessment (NCTLA). The NSSL seeks to "expand knowledge about college impact by examining the influence of academic and nonacademic experiences on (a) student learning, (b) student attitudes about learning, (c) student cognitive development, and (d) student persistence" (Pascarella et al., 1995, p. 2).

Institutional Sample

The target population of institutions for this study included all colleges and universities in the U.S., except for historically black institutions (because of the general absence of white students) and specialized institutions such as theological seminaries, tribal colleges, and technical institutes. The institutional sample consisted of 17 colleges and universities in 10 states. Institutions were selected based on the U.S. Department of Education's National Center for Education Statistics' Integrated Postsecondary Education Data System (IPEDS). The sample represented nationwide differences in these institutions on a variety of characteristics reflected in IPEDS data (e.g., geographic location, size, governance, degree-granting status, racial and ethnic composition). Six colleges or universities were located in the Midwest, three in the West, four in the East, and four in the South. Undergraduate enrollments in the institutional sample in Fall 1992 ranged from approximately 1,000 to than more 25,000. The proportion of white undergraduates at the institutions sampled at that time ranged from 32% to 97%. Nine institutions were public; eight

private. Three of the private institutions were bachelor's-granting, liberal arts colleges. Of the remaining fourteen institutions, two were community colleges, five were master's-granting colleges, and seven were doctoral-granting universities (three of which were classified as research universities).

Student Sample, Instruments, and Variables

The student sample for this investigation (a subpopulation of a group that included racial and ethnic minorities) was designed to represent the population of white first-year undergraduates at institutions of higher education in the U.S. in Fall 1992. In Summer 1992, an administrator at each of the 17 participating institutions was given a target sample of eligible students at the college or university at which he or she was employed. The total number of eligible white students was 16,561. Administrators were asked to select 2,813 (17.0% overall) of these students at random to achieve the target sample. Of the selected students, 1,828 (65.0% of those selected) actually participated in the Fall, 1992 data collection—before starting their first year of college. In Spring, 1993, after their first year, 1,300 (71.1% of the Fall, 1992, participants) of these same students participated in the first follow-up data collection. In Spring, 1994, after their second year, 1,061 students (81.6% of the Spring, 1993, participants) completed the second follow-up (see Table 1).

Insert Table 1 about here

Each data collection lasted about three hours. Students were paid a stipend for their participation. Precollege survey forms included the American College Testing Program's (1989) Collegiate Assessment of Academic Proficiency (CAAP), which assessed students' declared majors in 23 categories, and a questionnaire designed to tap students' attitudes toward learning and demographic characteristics not covered by the CAAP. Information was gathered on students'

sex, family income, father's education, degree aspirations. Family income and father's education were not combined into a single scale for socioeconomic status because research (e.g., Springer et al, 1995) has suggested that the variables can have divergent effects on attitudes toward diversity.

The Fall 1992, data collection also measured students' attitudes toward diversity on campus with items that reflected the importance students placed on interacting with diverse individuals and learning about people from other cultures as part of their collegiate experiences. Students indicated during the Spring, 1993, data collection (after their first year of college) whether they participated in a racial or cultural awareness workshop during the 1992-1993 academic year. Students' diversity-related attitudes were again assessed in 1994 (at the end of their second year of college) and were operationalized as a two-item, five-point Likert scale labeled "attitude toward diversity" (1992: $\alpha = .78$, 1994: $\alpha = .81$). The item content of the scale, and means and standard deviations of all variables included in the analyses are listed in Table 2.

Insert Table 2 about here

The 1994 data collection (after students' second year) again assessed students' declared major fields. Categories of students' majors were collapsed based on research associating different majors with relatively liberal or conservative attitudes among faculty and students (e.g. Feldman & Newcomb, 1994; Ladd & Lipset, 1973). Feldman and Newcomb (1994) propose that definitions of liberal and conservative vary with time and locality. They describe the label "conservative" as generally "applied to a person who believes in self-advancement by personal exertion and in the essential rightness of the existing social and economic inequalities . . . . By contrast, the liberal . . . position is one which favors change" (p. 19).

Studies of attitudes of students in different major fields have produced somewhat ambiguous results, however, largely because of a failure to "follow students who start *and* stay in the same major field" (Pascarella & Terenzini, 1991, p. 312). To address this problem, 368 (238 female, 130 male) of the 1,061 students in the sample were classified as a reference group because they did not declare a major or they switched from one field to another (conservative to liberal or vice versa) during their first two years of college. The reference group comprised 34.7% of the sample. The 335 students (230 female, 105 male) who remained in liberal fields comprised 31.6% of the sample and the 358 students (209 female, 149 male) who remained in conservative fields accounted for the remaining 33.7%.

Data Analysis

The three research questions were addressed with separate analyses. First, a two-way analysis of covariance (ANCOVA) was employed to determine whether students' sex or major or both were associated significantly with their attitudes toward diversity before college—net of their degree aspirations, family income, and father's education (mother's education was not included in the analysis because of multicollinearity). Second, a logistic regression assessed whether students were more or less likely to participate in a racial or cultural awareness workshop during their first year of college based on differences in sex, major field, degree aspiration, father's education, family income, and attitude toward diversity. Logistic regression generally predicts probabilities of a dichotomous dependent measure (such as participation and non-participation) more accurately than linear regression (Menard, 1995). Third, a second two-way ANCOVA (with the addition of precollege attitude toward diversity as a covariate) assessed the impact of participating in the workshop on students' attitudes toward diversity at the end of their second year of college.

RESULTS

Results of the first ANCOVA (see Tables 3 and 4) indicate that, after controlling for family income, father's education, and degree aspirations, both sex and major field were significantly related to students' precollege attitudes toward diversity on campus. The multivariate F test suggests that the model fits the data, $F(8,1053)=7.0$, $p<.001$. The model explained 8.9% of the variance in students' attitudes. Women held significantly more favorable precollege attitudes toward diversity than men, $F(1,1060)=29.1$, $p<.001$, and students in liberal majors held more favorable initial attitudes than students in conservative majors, $F(2,1059)=11.0$, $p<.001$. No interaction between sex and major was found. Students with higher degree aspirations, $F(1,1060)= 15.8$, $p<.001$, and students with more highly educated fathers, $F(1,1060)=18.3$, $p<.001$, generally held more favorable attitudes. Family income was not significantly related to students' attitudes toward diversity.

Insert Tables 3 and 4 about here

Table 5 reports the results from the logistic regression predicting participation in a racial or cultural awareness workshop. The model chi-square (9, N=1061)=103.9, $p<.001$, which is analogous to the multivariate F test for linear regression (Menard, 1995), suggests that the model fits the data quite well, accurately predicting 76.4% of the cases. According to the model, students who stayed in conservative majors during their first two years of college were significantly less likely ($p<.001$) to participate in a racial or cultural awareness workshop during their first year of college than students who stayed in liberal majors or students in the reference group (those who switched from a liberal to conservative major, or vice versa, or those who remained undecided). Students who stayed in liberal majors did not differ significantly from students in the reference

group in their likelihood of participating. Students with fathers who had some postbaccalaureate education ($p<.05$) and students with higher degree aspirations ($p<.001$) were also more likely to participate in the workshops. Of greater interest, however, these differences remained net of students' attitudes toward diversity, which, not surprisingly, were also significantly and positively related to their participation ($p<.001$). Other assessed variables did not have significant effects.

Insert Table 5 about here

Figure 2 reports probabilites of participation in the workshops for groups of students by major. Students who switched majors or remained undecided (the reference group) were predicted to participate at a rate of 27.7%. The predicted participation rate of students who stayed in liberal majors was 31.3%, in contrast to the significantly lower 15.4% predicted participation rate of students who stayed in conservative majors.

Insert Figure 2 about here

Finally, Table 6 reports that the end-of-second-year model fit the data quite well, $F(15,1046)=31.5$, $p<.001$, explaining 30.6% of the variance in students' attitudes in 1994. Net of precollege attitude and other covariates, participation in a racial or cultural awareness workshop, $F(1,1060)=30.9$, $p<.001$, sex, $F(1,1060)=19.1$, $p<.001$, and major field, $F(2,1059)=4.5$, $p<.05$ all had significant effects on students' attitudes toward diversity on campus at the end of their second year of college. More importantly, no interaction effects were found, indicating that the effect of participation was general—leading to more favorable attitudes for both men and women and for students in different majors. Indeed, as reported in Table 7, students who participated in

the workshops developed more favorable attitudes toward diversity on campus, while students who did not participate developed less favorable attitudes.

Insert Tables 6 and 7 about here

Limitations

This study is limited in several ways. Most importantly, effects might differ depending upon whether participation in the workshops was voluntary or mandatory, but this information was not available to researchers. In addition, the social-psychological processes through which students' attitudes changed were not investigated. Although the study suggests that participation in a racial or cultural awareness program leads to more favorable attitudes toward diversity among white college students, it does not provide clarity on how or why this effect takes place. Moreover, only changes during the first two years of college were assessed. Changes might take place at a different rate, or even in a different direction, during the remainder of students' college careers.

Similarly, attitude toward diversity is a complex construct that the two-item scale employed for the study might only begin to tap. Although students were asked to provide "honest" responses to survey items, their answers to these questions might reflect social desirability, or the perceived expectations of evaluators, to some extent. In addition, workshop participation was the only behavioral consequence of students' attitudes assessed in this study, an association confounded by the lack of data on whether participation was required. Moreover, other potentially significant behavioral antecedents to attitude change, such as social interaction with minority students or participation in courses such as African-American studies, were not assessed.

Limitations in the institutional and student sample also have a bearing on interpretations of the data. Although the sample is multi-institutional and representative of a fairly broad range of

colleges and universities in the U.S., the sample is too small to generalize conclusion to all such institutions with a great deal of confidence. Similarly, the student sample might reflect some self-selection. Students who participated in the follow-up studies might not necessarily have represented the backgrounds, attitudes, and behavior of those who left the institution or those who chose not to participate for other reasons.

DISCUSSION AND CONCLUSIONS

Despite these limitations, the study has several important implications for higher education researchers and practitioners. The results indicate that gender-related and major-field-related differences in attitudes toward diversity are separate—that the more favorable attitudes among women in general cannot be attributed entirely to greater numbers of women concentrating in liberal majors, such as education and the social sciences, than conservative majors, such as engineering and the physical sciences. In addition, the results suggest that participating in a racial or cultural awareness workshops does, indeed, promote the development of more favorable attitudes toward diversity on campus among white students. Moreover, the effects are general—being positive for men and women and for students in both liberal and conservative majors. Although students in conservative majors are less likely to participate in the workshops, if they do participate, they do tend to develop more favorable attitudes toward diversity on campus at the same rate as students in more liberal majors. The finding is of particular importance because students in conservative majors (especially male students) start college with significantly less favorable attitudes toward diversity on campus.

At a time when racially motivated hostility appears to be increasing, colleges and universities can contribute to the social development of students by implementing effective educational interventions. A growing body of literature (e.g., Banks, 1995) suggests that prejudice reduction through the development of more favorable racial attitudes represents one of

many important aspects of multicultural education. The results of this investigation indicate that leaders on campus might be able to improve their racial climates (see Hurtado, 1992) by promoting participation in a racial or cultural awareness workshop. Males, students with less educated parents, students with lower degree aspirations, and students in conservative majors such as business, engineering, and the physical or natural sciences could especially benefit from participation.

Several resources are available for practitioners who would like to develop racial or cultural awareness workshops on their campuses. Henley and Arnold (1990) and Nesbitt et al. (1994), for example, discuss the development of workshops on unlearning racism. Nesbitt et al. (1994) and Pope (1993) describe the implementation of racial or ethnic awareness programs. Christie and Borns (1991) list several resources including printed material, videotapes, organizations, consultants, and descriptions of activities that might prove valuable to individuals working to understand and counteract racism on college campuses. Acknowledging the time demands on college students, effective incentives such as academic credit might raise participation rates in these programs (Neville & Furlong, 1994).

Although this study provides some clarity on the effects of participation in a racial or cultural awareness workshop on white students' attitudes toward diversity on campus, several important questions remain unanswered. Are the effects different if participation is voluntary or mandatory? What is the impact of participation on African-American, Asian-American, Chicano, or Latino students? Do the observed changes in attitudes have measurable behavioral consequences? Do the observed effects replicate after students' first two years of college and at a broader range of institutions? How and why do students' attitudes change?

To address these questions, researchers might employ a variety of methods and designs. Longitudinal designs for research on students at four-year institutions might follow Feldman and Newcomb's (1994) suggestion of investigating the first two years of college separately from the remaining years (to account for likely differences in the effects of general education requirements

during the first two years versus the subsequently greater emphasis on specialized study in one's major field), or might include variables reflecting courses taken by students. More long-term research, extending into students' post-college careers, is also needed to better understand the lasting impact of collegiate interventions such as those investigated in this study. The results of this investigation, however, represent an important step in understanding the positive effects of racial and cultural awareness workshops on students while they attend college.

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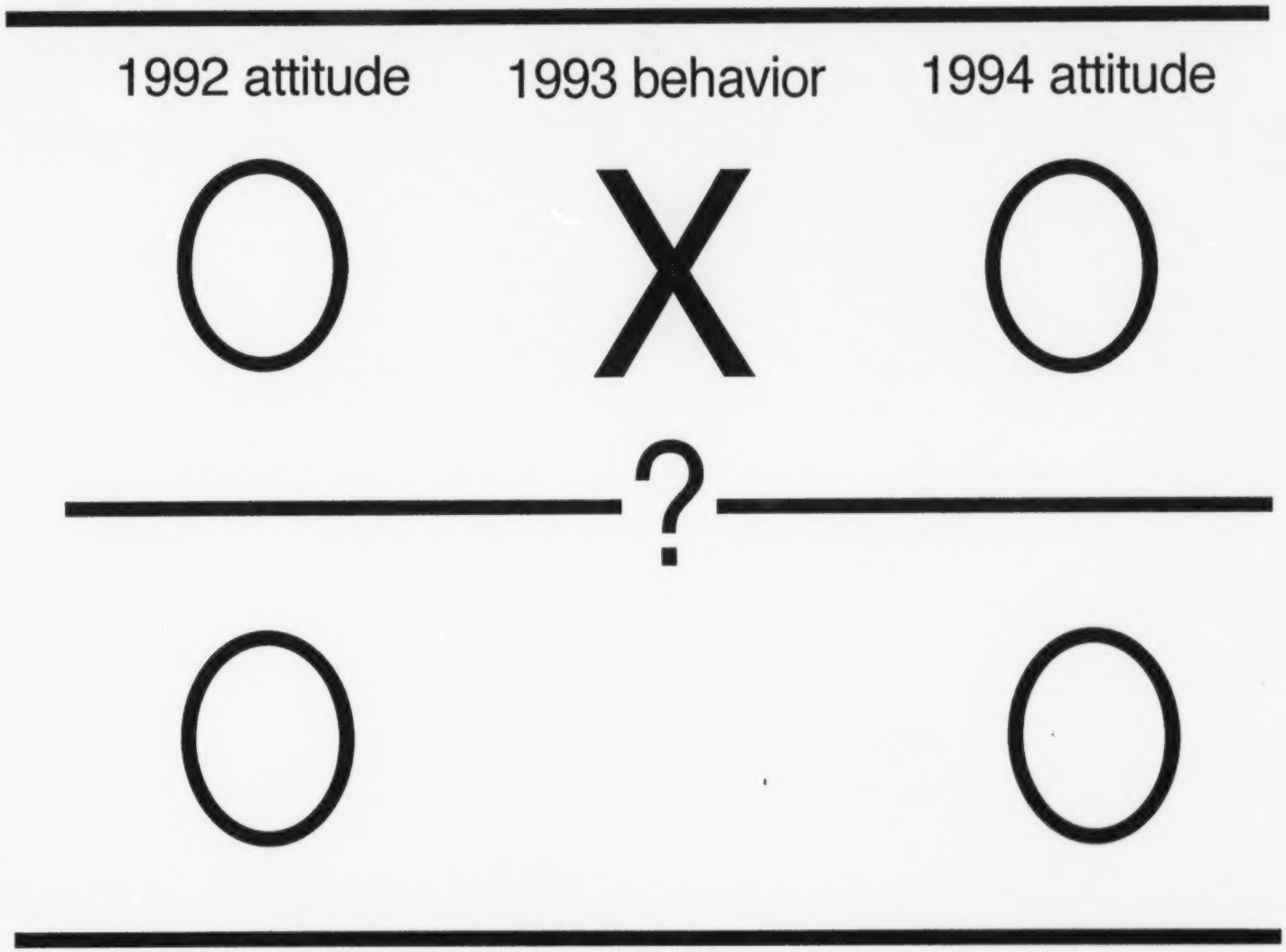

Figure 1. Three-wave panel design (adapted from Campbell and Stanley, 1963, p. 68).

Table 1

Targeted and Actual Student Participation

Students	N	% of Preceding Category	% of Targeted Students
Eligible	16,561		
Targeted	2,813	17.0	100.0
Participated Fall 1992	1,828	65.0	65.0
Participated Spring 1993	1,300	71.1	46.2
Participated Spring 1994	1,061	81.6	37.7

Table 2

Variables in Model of Attitude toward Diversity and Participation in a Racial or Cultural Awareness Workshop

Date/Variable	Mean	*SD*
Fall 1992 (Precollege)		
Sex: 0 = female (n = 677), 1 = male (n = 384).		
Major: 0 = switched majors or undecided (n = 368), 1 = liberal (n = 335), 2 = conservative (n = 358).		
Father's Education: Single-item 4 point scale, where 1 = high school or less and 4 = postbaccalaureate.	2.63	1.15
Family Income: 14-point scale, where 1 = less than $6,000 and 14 = $150,000 or more.	8.90[a]	2.88
Degree Aspiration: Single-item 5 point scale reflecting student's highest academic degree sought in lifetime where 1 = no degree and 5 = doctorate.	4.23	.73
Attitude toward Diversity: 2-item scale reflecting the importance of contact with individuals from different backgrounds (e.g., race, national origin, sexual preference) and learning about people from different cultures (α = .78). Scored on a 5-point scale, where 1 = strongly disagree and 5 = strongly agree.	4.04	.76
Spring 1993 (After first year of college)		
Participation in Racial or Cultural Awareness Workshop: 0 = No (n = 799), 1 = Yes (n = 262).		
Spring 1994 (After second year of college)		
Attitude toward Diversity: See above (α = .81).	3.76	.90

[a]8 = $35,000 to $39,999 and 9 = $40,000 to $49,999.

Table 3

Analysis of Covariance for the Effects of Sex and Major on Precollege Attitude toward Diversity

Source of Variation	Sum of Squares	*df*	Mean Square	*F*	*p*
TOTAL	614.467	1060	.580		
Explained	55.796	8	6.974	13.133	.000
Main Effects	29.663	3	9.888	18.619	.000
Sex	15.476	1	15.476	29.143	.000
Major	11.665	2	5.833	10.983	.000
Covariates	25.019	3	8.340	15.704	.000
Family Income	.046	1	.046	.087	.768
Father's Education	10.462	1	10.462	19.700	.000
Degree Aspiration	8.565	1	8.565	16.128	.000
Interaction					
Sex X Major	1.114	2	.557	1.049	.351
Residual	558.671	1052	.531		

Note. Controlling for family income, father's education, and degree aspiration.

Table 4

Unadjusted and Adjusted Means for Sex and Major on Precollege Attitude toward Diversity

		Mean Attitude Score	
Variable	N	Unadjusted	Adjusted[a]
Sex			
Female	677	4.14	4.13
Male	384	3.87	3.88
Major			
Switched or Undecided	368	4.04	4.03
Liberal	335	4.20	4.18
Conservative	358	3.89	3.92

Note. Controlling for family income, father's education, and degree aspiration.
[a]Adjusted for the effect of the other independent variable and for family income, father's education, and degree aspiration.

Table 5

Logistic Regression for Predicting Participation in a Racial or Cultural Awareness Workshop

Variable	Unstandardized Logistic Regression Coefficient (*b*)	Standard Error of *b*	Statistical Significance of *b*	Standardized Logistic Regression Coefficient
Sex[a] (Female)	-.013	.081	.8704	-.003
Major[b]			.0003	
Liberal	.134	.173	.4403	.004
Conservative	-.640	.194	.0010	-.210
Father's Education[c]			.0023	
Some College	-.226	.244	.3544	-.103
College Degree	-.053	.238	.8236	-.024
Postbaccalaureate	.512	.224	.0225	.234
Precollege Attitude	.544	.115	.0000	.165
Degree Aspiration	.460	.116	.0001	.134
Family Income	-.003	.029	.9082	-.004
Constant	-5.303	.708	.0000	

Note. Model χ^2 (9, N = 1061) = 103.9, $p < .001$.
[a]Male is the reference group. [b]Switched or undecided is the reference group.
[c]High school or less is the reference group.

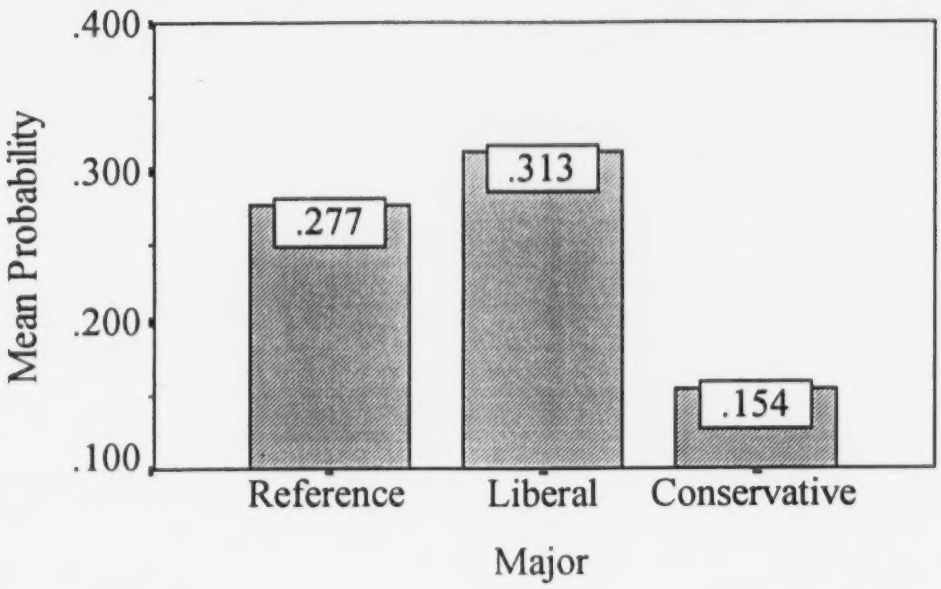

Figure 2. Probability of Participating in a Racial or Cultural Awareness Workshop by Major.

Table 6

Effects of Sex, Major, and Participation in a Racial or Cultural Awareness Workshop on Attitude toward Diversity

Source of Variation	Sum of Squares	*df*	Mean Square	*F*	*p*
TOTAL	854.723	1060	.806		
Explained	266.137	15	17.742	31.501	.000
Main Effects:	37.265	4	9.316	16.540	.000
Workshop Participation	17.389	1	17.389	30.874	.000
Sex	10.783	1	10.783	19.145	.000
Major	5.048	2	2.524	4.481	.012
Covariates:	224.370	4	56.092	99.589	.000
Precollege Attitude	210.198	1	210.198	373.194	.000
Family Income	.131	1	.131	.232	.630
Father's Education	.999	1	.999	1.774	.183
Degree Aspiration	.012	1	.012	.020	.886
3-Way Interaction:					
Workshop X Sex X Major	2.105	2	1.053	1.869	.155
2-Way Interactions:	2.397	5	.479	.851	.514
Workshop X Sex	1.372	1	1.372	2.436	.119
Workshop X Major	.646	2	.323	.573	.564
Sex X Major	.269	2	.135	.239	.788
Residual	588.586	1045	.563		

Note. Controlling for precollege attitude, family income, father's education, and degree aspiration.

Table 7

Unadjusted and Adjusted Means for Workshop Participation, Sex, and Major on Attitude toward Diversity

Variable	N	Mean Attitude Score	
		Unadjusted	Adjusted[a]
Workshop Participation			
Yes	262	4.16	3.99
No	799	3.63	3.68
Sex			
Female	677	3.90	3.84
Male	384	3.52	3.62
Major			
Switched or Undecided	368	3.78	3.77
Liberal	335	3.96	3.84
Conservative	358	3.55	3.67

Note. Controlling for precollege attitude, family income, father's education, and degree aspiration.

[a]Adjusted for the effect of the other independent variable and for precollege attitude, family income, father's education, and degree aspiration.